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December 29, 2017

Sussex County Planning and Zoning
2 The Circle
Georgetown, DE 19947

Attn: Janelle Cornwell, Director of Planning

RE: **Crivella Property**
Response to PLUS Review-2017-01-05
Tax Map No.: 5-33-11.00-82.00
DBF #818C027

Dear Ms. Cornwell:

We have read and reviewed the comments provided during the PLUS Review of the Project on October 25, 2017, and received from the Office of State Planning dated November 27, 2017. We offer the following item-by-item response narrative for your review:

Strategies for State Policies and Spending

This project is located in Investment Level 3 according to the Strategies for State Policies and Spending. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments may support future growth in these areas, but please be advised that the State has other priorities for the near future. We encourage you to design the site with respect for the environmental features which are present.

We recognize that the project is located in Investment Level 3. With the growth in the area, development of the adjacent parcel to the north and the availability of central sewer, we believe this project to be a good fit to the surrounding community. The site will be designed with respect to the environmental features located on the parcel. Wetlands will be protected by a 40' buffer and areas within the 100-yr flood plain will remain undisturbed.

Code Requirements/Agency Permitting Requirements

Department of Transportation - Contact Bill Brockenbrough 760-2109

- The site access must be designed in accordance with DelDOT's Development Coordination Manual, which is available at <http://www.deldot.gov/Business/subdivisions/index.shtml?dc=changes>.
Site access will be designed in accordance with DelDOT standards.
- Pursuant to Section P.3 of the Manual, a Pre-Submittal Meeting is required before plans are submitted for review if the proposed development will generate more than 200 vehicle trip ends per day. The form needed to request the meeting and guidance on what will be covered there and how to prepare for it is located at http://www.deldot.gov/Business/subdivisions/pdfs/Meeting_Request_Form.pdf?080220

Developer will schedule a Pre-Submittal meeting.

- Per Section 2.2.2.1 of the Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. From the PLUS application, we see that the total daily trips are estimated at 1,202 vehicle trip ends per day.

Section 2.2.2.2 of the Manual provides that for developments generating less than 2,000 vehicle trip ends per day and less than 200 vehicle trip ends per hour in any hour of the day, DelDOT may accept an Area Wide Study (AWS) Fee in lieu of the TIS if the local government does not require a TIS. The AWS Fee is calculated as \$10 times the average daily traffic, or in this case \$12,020. Payment of the AWS Fee does not relieve the developer from responsibility for off-site improvements that DelDOT may identify as necessary or for performing a Traffic Operational Analysis (TOA) if DelDOT determines that a TOA is needed to address the operation of the site entrance(s).

Per Section 2.3.2 of the Manual, because the development would generate more than 200 vehicle trip ends per day, DelDOT may require a Traffic Operational Analysis (TOA) if it determines in the plan review process that a TOA is needed to address a concern about the proposed site entrance. DelDOT has not yet identified a need for a TOA but the matter should be discussed at the Pre-Submittal Meeting mentioned above.

Developer will work with DelDOT in regards to a Traffic Impact Study, the Area Wide Study Fee, and Traffic Operational Analysis.

- As necessary, in accordance with Section 3.2.5 and Figure 3.2.5-a of the Manual, DelDOT will require dedication of right-of-way along the site's frontage on Zion Church Road. By this regulation, this dedication is to provide a minimum of 40 feet of right-of-way from the physical centerline of the road. The following right-

of-way dedication note is required, "An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat."

There is currently 35' of right-of-way along the frontage. Additional right-of-way will be dedicated on the record plan to satisfy DelDOT's requirements.

- *In accordance with Section 3.2.5.1.2 of the Manual, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on Zion Church Road. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space calculation for the site. The following note is required, "A 15-foot wide permanent easement is hereby established for the State of Delaware, as per this plat."*

Developer will provide the required 15' wide permanent easement across the frontage of the property

- *As per the Delaware Strategies for State Policies and Spending, this development is in Investment Level 3. Referring to Section 3.5.4.2.A of the Manual, developments in Level 3 and 4 Areas are required to install a sidewalk or Shared Use Path if the project abuts to an existing facility. If the project does not abut an existing facility, it is at the Subdivision Engineer's discretion. This project is in a Level 3 Area and DelDOT anticipates requiring a Shared Use Path along the site frontage.*

Developer will work with DelDOT Subdivision Engineer in regards to the requirements of the shared use path.

- *In accordance with Section 5.2.9 of the Manual, the Auxiliary Lane Worksheet should be used to determine what auxiliary lanes are warranted at the site entrance and how long those lanes should be. The worksheet can be found at <http://www.deldot.gov/Business/subdivisions/index.shtml>.*

The auxiliary lane worksheet will be used to determine entrance improvements required.

- *In accordance with Section 5.4 of the Manual, sight distance triangles are required and shall be established in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. A spreadsheet has been developed to assist with this task. It can be found at <http://www.deldot.gov/Business/subdivisions/index.shtml>. The entrance should be located so as to optimize sight distance while still providing the necessary auxiliary lanes and other road improvements.*

The entrance will conform to DelDOT and AASHTO standards.

Department of Natural Resources and Environmental Control - Contact Michael Tholstrup 735-3352

Executive Summary

Development of this parcel will result in increased impervious surface and new sources of greenhouse gas emissions. Opportunities exist to preserve natural resources while reducing the environmental impact on-site. As discussed at the PLUS meeting, the Department recommends preserving the existing forest, increasing wetland buffers and minimizing development on hydric soils which will also help protect water quality in the Greater Inland Bays watershed.

The State of Delaware is threatened by climate change and has a goal of reducing greenhouse gas emissions by 30 percent by 2030. Appropriate development and re-development that provides access to public transportation, opportunities to walk and bike to shopping and recreation, and that employs energy efficient building standards are among key strategies to meet these goals. DNREC encourages the use of high performance building standards and consideration of alternative energy sources to promote clean sustainable energy and reduce greenhouse gas emissions. This could mean siting the buildings to take advantage of solar and geothermal systems, and/or including infrastructure for electric vehicle charging stations (funding assistance may be found at www.de.gov/cleantransportation). They further recommend an abundant use of native vegetation and shade trees throughout the landscape, as well as pervious pavement and green infrastructure, where practicable, to absorb carbon dioxide, protect water quality and provide relief to residents on hot days.

The following pages provide information about applicable regulations and detailed recommendations associated with this project, from various DNREC Divisions. DNREC would like to be a partner in creating appropriate development that protects and highlights the environment as a natural amenity of the landscape. The Department has resources and expertise that are available to help make this a reality, often at no expense to the landowner.

Water Quality: TMDLs

- The project is located in the low nutrient reduction zone of the greater Inland Bays watershed. In this watershed, Total Maximum Daily Load (TMDL) pollutant reduction targets have been developed by the State of Delaware (under the auspices of Section 303(d) of the 1972 Federal Clean Water Act) for nutrients (e.g., nitrogen, phosphorus), and bacteria. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited*

waterbody" can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; State of Delaware Surface Water Quality Standards, as amended July 11, 2004) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. The TMDL for the low reduction zone of the Inland Bays watershed calls for 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 40 percent reduction (17 percent for marine waters) in bacteria from baseline conditions. Please view the following web link for further information on the regulatory requirements and technical analysis involved in the development of the specific

TMDLs:

<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedAssessmentTMDLs.aspx>

- *The Inland Bays Pollution Control Strategy (PCS) and the accompanying regulations were finalized by order of the DNREC Secretary in October 2008. The PCS regulations can be reviewed here:*

<http://regulations.delaware.gov/documents/November2008c.pdf>

Background information about the PCS with guidance documents and mapping tools can be retrieved here:

http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/ib_pcs.htm

The developer will work with DNREC and the Sussex County Conservation district to meet or exceed all required TMDL reductions. We do not anticipate disturbance to areas within the 100-yr flood plain and wetlands will be protected by a 40' buffer.

Water Supply

- *The information provided indicates that Artesian Water Company will provide water to the proposed project through a public water system. DNREC files reflect that Artesian Water Company does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at (302) 736-7500.*
- *Should an on-site public/miscellaneous public well be needed, a minimum isolation distance of 150 feet is required between the well and any potential source of contamination, such as a septic tank and sewage disposal areas, stormwater management pond, and at least 150 feet from the outermost boundaries of the project. The DNREC Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the*

Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

The developer will work with and get approval from Artesian in regards to water supply and CPCN territories. We do not anticipate a public well on site, should one be needed a permit will be obtained through DNREC Division of Water Resources.

- *Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.*

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications take approximately four weeks to process, which allows the necessary time for technical review and advertising. Should you have any questions concerning these comments, please contact Rick Rios, at (302) 739-9944.

A permit will be obtained through Water Supply section should dewatering be needed.

Sediment and Erosion Control/Stormwater Management.

- *A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre- application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact the Sussex Conservation District at (302) 856-7219 for details regarding submittal requirements and fees.*

A detailed sediment and stormwater plan will be submitted to Sussex Conservation District for their approval.

Air Quality

- *The applicant shall comply with all applicable Delaware air quality regulations. Please note that the following regulations in Table 1 - Potential Regulatory Requirements may apply to your project:*

Table 1: Potential Regulatory Requirements	
Regulation	Requirements
7 DE Admin. Code 1106 -Particulate Emissions from Construction and Materials Handling	<ul style="list-style-type: none"> • Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads. • Use covers on trucks that transport material to and from site to prevent visible emissions.
7 DE Admin. Code 1144 - Control of Stationary Generator Emissions	<ul style="list-style-type: none"> • Ensure that emissions of nitrogen oxides (NOx), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO₂), carbon monoxide (CO), and carbon dioxide (CO₂) from emergency generators meet the emissions limits established. (See section 3.2). • Maintain recordkeeping and reporting requirements.
7 DE Admin. Code 1145 - Excessive Idling of Heavy Duty Vehicles	<ul style="list-style-type: none"> • Restrict idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.

*For a complete listing of all Delaware applicable regulations, please look at our website:
<http://www.dvm.delaware.gov/AQM/Pages/AirRegulations.aspx>*

The developer will comply with Delaware code in regards to air quality.

State Historic Preservation Office - Contact Terrence Burns 736-7404

- *There is a known house (S02016) on the parcel, probably built in the early to mid-20th century. If any project or development proceeds, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law. Prior to demolition or ground-disturbing activities, the developer should hire an archaeological consultant, to examine the parcel for archaeological resources, including unmarked human burials or human skeletal remains, to avoid those sites or areas.*

Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, within or near the boundary, of a historic farm site. Even a marked cemetery can frequently have

unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Del. C. Title 7, Ch. 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to see more information, please review the following websites: www.history.delaware.gov/preservation/umhr.shtml and www.history.delaware.gov/preservation/cemeteries.shtml.

- If there is federal involvement, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties. Furthermore, any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role; please review the Advisory Council's website at the following: www.achp.gov.

The known house was in disrepair and previously demolished. Should unmarked graves be discovered the developer will follow all state and federal laws.

Delaware State Fire Marshal's Office - Contact John Rudd 739-4394

At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

Fire Protection Water Requirements:

- o *Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers.*
- o *Where a water distribution system is proposed for sites of Storage buildings, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.*

Fire Protection Features:

- o *All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed and*
- o *Buildings greater than 10,000 sqft. or classified as High Hazard, are required to meet fire lane marking requirements*
- o *Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.*
- o *Show Fire Lanes and Sign Detail as shown in DSFPR*

Accessibility

- o *All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus.*
- o *Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.*
- o *The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.*
- o *The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.*

Required Notes:

- o *Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"*
- o *Proposed Use*
- o *Alpha or Numerical Labels for each building/unit for sites with multiple*

buildings/units

- o *Square footage of each structure (Total of all Floors)*
- o *National Fire Protection Association (NFPA) Construction Type*
- o *Maximum Height of Buildings (including number of stories)*
- o *Note indicating if building is to be sprinklered*
- o *Name of Water Provider*
- o *Letter from Water Provider approving the system layout*
- o *Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered*
- o *Provide Road Names, even for County Roads*

Recommendations/Additional Information

*This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped (**but in no way required**) that the applicant will open a dialogue with the relevant agencies to discuss how the suggestions can benefit the project.*

The developer will work with the Fire Marshal's office to ensure plans exceed Delaware State Fire Prevention regulations. Water will be supplied by artesian water to comply with the water flow and duration requirements should a fire occur. Buildings will be equipped with automatic sprinkler system. All fire lanes and department will be marked accordingly. Plans will be submitted to the fire Marshal for their review and approval.

Department of Transportation - Contact Bill Brockenbrough 760-2109

- *There are existing shoulders along Zion Church Road. It is recommended to request cores from DelDOT to determine if the existing shoulders are structurally sufficient for the entrance or roadway improvements.*
- *The applicant should expect a requirement that any substation and/or wastewater facilities will be required to have access from an internal driveway with no direct access to Zion Church Road.*
- *The applicant should expect a requirement that all PLUS and Technical Advisory Committee (TAC) comments be addressed prior to submitting plans for review.*
- *Please be advised that as of August 1, 2015, all new plan submittals and re-submittals, including major, minor and commercial plans, shall now be uploaded*

via the PDCA (Planning Development Coordination Application) with any review fee paid online via credit card or electronic check. Guidance on how to do this is available on our website at

<http://www.delDOT.gov/Business/subdivisions/index.shtml>.

- Please be advised that the Standard General Notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of October 11, 2017. The notes can be found at <http://www.delDOT.gov/Business/subdivisions/index.shtml>*

The developer will work with DelDOT in determining the required entrance improvements and suitability of the shoulders for entrance/roadway improvements. All buildings and improvements on site will have internal access from a subdivision street with no direct access to Zion Church Road. Applications and plans will be submitted for DelDOT's review and approval.

Department of Natural Resources and Environmental Control - Michael Tholstrup 735-3352

Soils Assessment

- Based on NRCS soils survey mapping update, the soil mapping units of concern are Mullica-Berryland complex (MuA) and Longmarsh (LO). Mullica-Berryland complex and Longmarsh are very poorly-drained wetland associated (hydric) soils with severe limitations for development (considered unsuitable for development; Figure 1).*
- DNREC strongly discourages building on hydric soils because they are functionally important source of water storage (functions as a "natural sponge"); the loss of water storage through excavation, filling, or grading of intact native hydric soils increases the probability for more frequent and destructive flooding events. The probability for flooding is further compounded by increases in surface imperviousness as building density in the area increases over time. Moreover, destruction/filling of hydric soils increases the amount pollutant runoff (i.e., hydric soils sequester and detoxify pollutants) which contributes to the decline in water quality in regional waterbodies and wetlands.*

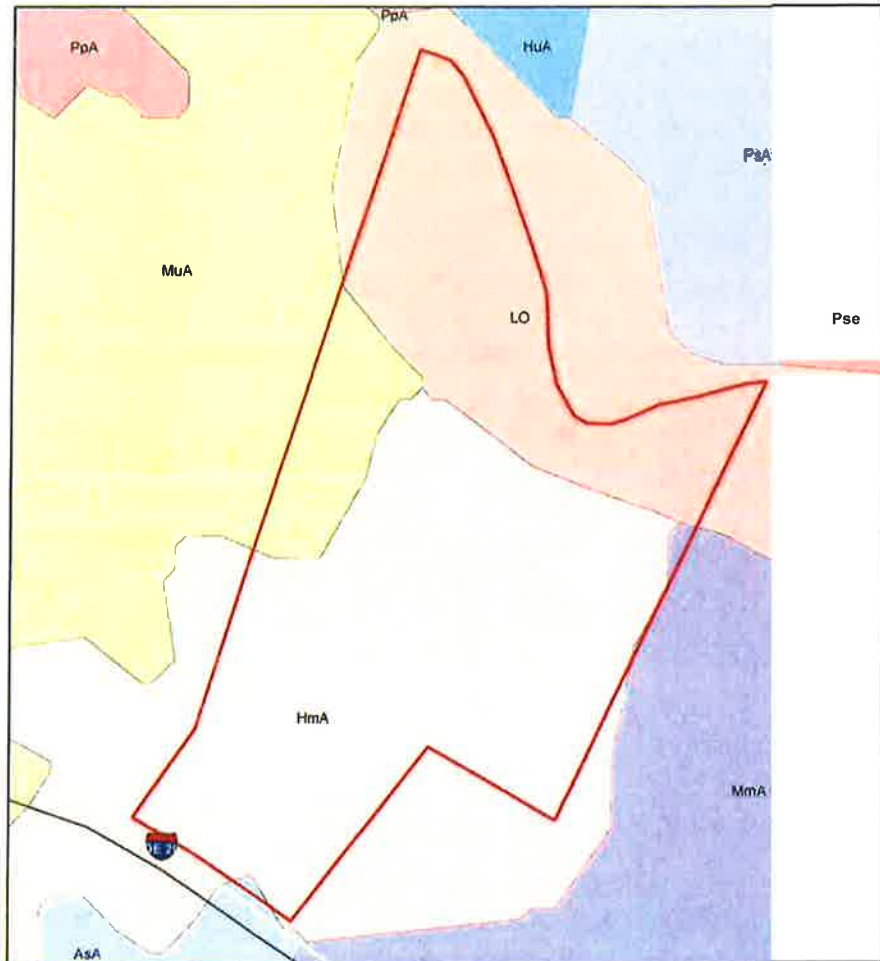
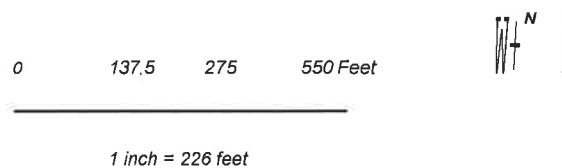


Figure 1: NRCS soil survey mapping update in the immediate vicinity of the proposed construction



The site has been designed to avoid the majority of the hydric soils. The rear of the site will remain largely woods areas with wetland areas protected by a 40' buffer.

Fish and Wildlife

- *High concentrations of waterfowl that are often attracted to stormwater ponds will create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. These are valid reasons to deter waterfowl from taking up residence in the pond as well as to look for alternative stormwater management opportunities that do not involve wet ponds.*

DNREC recommends planting the perimeter of the pond with a mix of native wildflower plantings to deter waterfowl. This 15 to 30-foot buffer, which should only be mowed annually in February or March, will deter waterfowl by reducing their ability to scan for predators. Short manicured lawns that typically surround these ponds unfortunately provide attractive habitat for these geese.

Thank you for your suggestions to reduce nuisance waterfowl.

Additional information on TMDLs and water quality

- *Compliance with the specified TMDL nutrient and bacterial reduction requirements specified for the Inland Bays watershed can be facilitated by adherence to the strategies and requirements described in the Inland Bays PCS, and the implementation of the following recommended best management practices:*
 - o *Maintain as much of the existing open space as possible; it is further suggested that additional native tree and native herbaceous planting, wherever possible.*
 - o *Have a United Army Corps of Engineers (USACE) approved wetlands delineation conducted before commencing any construction activities. Based on information submitted by the applicant in the PLUS application, a wetlands delineation was conducted but not approved by the USACE. A field based site-specific wetlands delineation by a licensed soil scientist is recommended to more precisely assess the presence of wetlands and hydric soils in this parcel (then obtaining the recommended approval from the USACE after the wetland delineation has been completed). A list of licensed Class D soil scientists can be obtained here:
<http://www.dnrec.deaware.gov/wr/Information/GWDInfo/Pages/GroundWaterDischargesLicensesandLicensees.aspx>*
 - o *Establish a vegetated buffer of at least 100 feet from the adjoining wetlands and waterbodies. Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. Wetland and Stream Buffer Requirements -A Review. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends*

that the applicant maintain/establish said 100-foot vegetated buffer (planted in native vegetation) from all waterbodies (including all ponds) and all non-tidal (USACE approved wetlands delineation) and tidal wetlands (State-approved wetlands delineation for State-regulated tidal wetlands). Based on the information presented in the PLUS application, the applicant has proposed a 20-foot buffer from wetlands and waterbodies. The Division of Watershed Stewardship believes that the proposed 20-foot buffer width is not sufficiently protective of water quality.

- o *Employ green-technology storm water management and a rain garden(s) (in lieu of open-water management structures) as best management practices to mitigate or reduce nutrient and bacterial pollutant runoff. If open-water stormwater management is selected for use, it should be minimized to achieve its' intended function of the management of stormwater. It should also be noted that open- water stormwater ponds attract nuisance geese and nuisance algae that will contribute to the deterioration of water quality in waters of the greater Inland Bays watershed.*
- o *Use pervious paving materials (when compatible or consistent with water quality concerns in areas designated as locations of excellent recharge (e.g., well head protection areas), as determined/assessed by a DNREC hydrogeologist) instead of conventional paving materials to help reduce the amount of water and pollutant runoff draining to adjoining streams and wetlands. Pervious paving materials are especially recommended for large commercial projects, such as this project, that create large amounts of post-construction impervious cover.*
- o *Assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the "Nutrient Load Assessment protocol." The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) resulting from the conversion of individual or combined land parcels to a changed land use; thus providing applicants and governmental entities with quantitative information about the project's impact(s) on baseline water quality. We strongly encourage the applicant/developer use this protocol to help them design and implement the most effective best management practices. Please contact John Martin of the Division of Watershed Stewardship, at (302) 739-9939 for more information on the protocol.*

Thank you for your suggestions to reduce TMDL's. A voluntary 40' wetlands buffer has been provided, the closest disturbance to the tax ditch is approximately 100' with the majority of the ditch is protected by 200'+ of vegetated buffer. Wetlands have been delineated and will be approved by the USACE. The developer will work with Sussex Conservation District to meet all required TMDL reduction requirements.

Additional information on air quality

- *New homes and businesses may emit, or cause to be emitted, additional air contaminants into Delaware's air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:*
 - *Emissions that form ozone and fine particulate matter;*
 - *The emission of greenhouse gases which are associated with climate change, and*
 - *The emission of air toxics.*
- *Site-specific recommendations:*
 - *This project has been demonstrated by FEMA Floodplain maps to be within the 100 Year Floodplain. It is recommended that the applicant revise the development plans in order to prevent impacts from a future flood event.*
 - *Planting of native trees to clean the air of localized pollutants and cut down on energy/cooling costs. Every effort should be made to preserve as many existing trees as possible.*
 - *Use the minimum amount of parking spaces needed and consider reducing the width of parking spaces to limit the amount of impervious cover.*
 - *The use of open grade recycled asphalt pavement (RAP) or selection of a cool pavement, which reduces heat island effects on paved surfaces.*
 - *Addition of bike lanes or sharrows that tie into the existing bike lane along Route 20.*
 - *The inclusion of electric vehicle charging in convenient, public areas such as near the clubhouse.*
 - *Use of energy efficient products in construction to lessen the power source emissions of the project and costs.*
 - *Beautification and landscaping to generate a context-sensitive design that would blend in well with surrounding land uses while also helping to*

mitigate the pollution potential of the project.

- *Planting of Native Trees: An element that the developer could incorporate is trees. Trees contain several benefits including:*
 - *Significantly reducing automobile emissions including those from pollutants such as nitrogen oxides (NOx), volatile organic compounds (VOCs), and the most harmful of all, particulate matter (PM) by trapping gases fumes and replenishing the oxygen into the ambient air;*
 - *Reducing the effects of heat islands by helping to cool asphalt and pavement which also lessens the chances of ozone formation;*
 - *Trees create healthy communities by promoting an active living and generating attractive places to walk and live;*
 - *Trees can prevent flooding and stormwater problems. A typical street tree can intercept anywhere between 400 to 760 gallons of water per day;*
 - *Increasing biodiversity by providing habitat for protected and sensitive species;*
 - *Providing shade for parking areas and lessens localized ground-level ozone formation (a pollutant);*
 - *Reducing home and business costs. This includes reducing energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.*

All urban trees that are selected should be native to Delaware and preferably low VOC emitting trees. Every tree has a different biogenic emissions rate by which they release VOC's into our atmosphere. VOC's are a component of smog and when mixed with other gases in the atmosphere (nitrogen oxide or NOx) in the presence of sunlight can contribute to air pollution risks. As a general rule, the best trees to plant are those that have: 1.) a large leaf surface area at maturity, 2.) contain leaf characteristics that are amenable to particle collection from particulate matter (PM) such as those that have hairy or sticky leaves and 3.) Have high transpiration rates which result in relatively high temperature reduction.

- *Energy Efficient Options: Constructing with only energy efficient products can help your facility immensely, not only in terms of environmental sustainability but financially. Energy Star qualified products are up to 30 percent more energy efficient. Savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water- heating equipment as well as third-party certifications and building materials (i.e. LEED, Greenseal,*

EcoLogo). Every percentage of energy efficiency translates into a percent reduction in pollution.

Economic benefits include:

- o Reduced operating costs*
- o Enhanced asset value and profits*
- o Enhanced occupant comfort and health*
- o Improved air, thermal, and acoustic environments*

The Energy Star Program is an excellent way to save on energy costs and reduce air pollution. Some approaches may include architectural devices, vegetation, or solar panels. Such measures can also have the additional benefit of channeling or infiltrating storm water. For more about energy efficient options, please see: <https://www.energystar.gov/> or <https://www.epa.gov/greeningepa/energy-efficiency-epa>

- *Multi-modal travel: A component of improving existing air quality levels is to maximize multi-modal travel through the following:*
 - o Bike lanes (or sharrows)*
 - o Sidewalks*
 - o Convenient access to transit opportunities.*

DNREC was pleased to see the inclusion of sidewalks in the development plan. It is recommended that bike lanes or sharrows be added to encourage multi-modal travel opportunities. Sharrows and striping are the easiest and most cost effective option. The bike lane could tie into existing bike lanes along Route 20. This includes attempting to address any gaps in the current bicycle and pedestrian network for increased connectivity. Multi-modal travel can significantly reduce mobile source emissions. For every vehicle trip that is replaced by the use of a sidewalk or bike path, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year. Another great feature for this development would be the addition of a bike rack in common areas (such as in front of the clubhouse.)

- *Clean Fuel Measures: This measure helps to reduce localized air pollution by supporting the use of low emission vehicles. It is recommended that electric vehicle charging be made available in at least one location in common areas such as near the clubhouse if feasible.*
- *Facility Beautification: Lastly, the developer is encouraged to beautify the*

development site with landscaping that would not only make the project more attractive but also help to clean the air of any pollutants that could be emitted by neighboring sources. This would also reduce its impact on the surrounding community after undergoing the construction process while also incorporating a context-sensitive design that blends well with the surrounding development and existing land uses.

- *Should the developer have any more questions or concerns, the DNREC Division of Air Quality (DAQ) point of contact is Lauren DeVore, and she may be reached at (302) 739- 9437 or lauren.devore@state.de.us. The applicant is encouraged to contact the DNREC DAQ to discuss any emission mitigation measures that will be incorporated into the Crivella Property project. We look forward to working together with you on this project to achieve our shared air quality, healthy community and quality of life goals!*

Thank you for your suggestions to improve air quality.

Additional information on recycling and reducing water use

- *Materials and resources utilized for new development should be considered, including regionally available recycled content (i.e. carpet, concrete, countertops, furniture, siding, etc.), rapidly renewable material and certified woods.*
- *Construction Waste Management should include policies which promote efficient material use and recycling of project debris).*
- *Employ systems and appliances that increase water efficiency and reduce water use.*
 - *Low-flow and high-efficiency items*
 - *Waterless urinals*
 - *graywater recycling systems*
 - *Rainwater catchment*

Thank you for your suggestions on recycling and reducing water use.

Delaware State Fire Marshall's Office - Contact John Rudd 739-4394

- *Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.statefiremarshal.delaware.gov technical services link, plan review, applications or brochures.*

We look forward to meeting with your office.

State Housing Authority - Contact: Karen Horton 739-4263

- *DSHA supports the rezoning of 14.85 acres from AR-1 to HR-1 in anticipation of a site plan of 178 residential apartment units along Zion Church Road in Sussex County for the following reasons:*
 - *This site is in close proximity to the many services, markets, and employment opportunities available in the coastal resort area - where there is a severe lack of rental housing.*
 - *DSHA recently updated its interactive Balanced Housing Opportunity maps using Market Valuation Analysis data from the Delaware Housing Needs Assessment 2015-2020, and new recommended data from HUD such as school performance and racially/ethnically concentrated areas of poverty (R/ECAPS). DSHA uses these maps to better understand the neighborhoods in Delaware and identify appropriate strategies to ensure equitable development. According to this map, the Crivella Property proposal is located in an 'Area of Opportunity' where environmental conditions and resources exist that are conducive to helping residents achieve positive life outcomes. These areas tend to be strong, high-value markets that contain little or no affordable housing.*
 - *Finally, it is important to note that while large suburban homes have dominated development in Delaware for several decades, a growing body of research indicates that we are in the midst of a significant market shift. The baby boomers that once drove suburban development are now aging and are looking to downsize into something more manageable. The Delaware Population Consortium (DPC) projections for the next ten years indicate that not only will there be a large amount of suburban homes placed on the market by baby boomers, but that there will be a decline in households in age ranges that typically seek large homes. These same DPC projections show growth in younger age ranges most likely at stages in their life and income to support apartments, condominiums and entry-level homes.*

The combination of excess suburban housing supply currently on the market, additional supply being added by aging baby boomers, more stringent lending standards, along with a changing market indicate that it is critical that communities move away from large lot single family-detached housing and proactively provide a variety of housing options to meet market demand.

If you have any questions or would like more information, please feel free to call me at (302) 739-4263 ext. 251 or via e-mail at karenh@destatehousing.com.

Thank you for your support of the rezoning.

Sussex County - Contact Jamie Whitehouse 855-7878

- *The parcel is in the Sussex County Unified Sanitary Sewer District, Johnson's Comer area and connection to the sewer system is mandatory. 8-Inch Sewer service has been extended to the parcel.*
- *4.0 EDUs per acre of sewer capacity has been allocated to AR-1 zoned parcels in the Johnson's Comer area area. The development is proposed at a density of 11.98 EDUs per acre which exceeds the total EDU allocation for the parcel. Downstream upgrades at the developer's expense may be required. A "Use of an Existing Infrastructure" agreement is required. Contact the Sussex County Utility Planning Division, 302 855- 1299, for additional information.*
- *Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A sewer concept plan must be submitted to the Sussex County Engineering Department for review and approval. Attached is a checklist for preparing sewer concept plans. All costs associated with system upgrades and extending sewer service will be the sole responsibility of the developer.*
- *Onetime System Connection Charges will apply. Please contact Mrs. Noell Warren at 855-7817 for additional information on charges.*

The developer will work with Sussex County engineering to determine what upgrades may be necessary to provide the site with sewer service. A sewer concept plan will be prepared and submitted for Sussex county engineering review and approval.

On behalf of the Developer we thank the State for providing us with these comments. Please contact me at (302) 424-1441 if you have any questions or need additional information.

Sincerely,
DAVIS, BOWEN & FRIEDEL, INC.

Jamie L. Sechler, P.E.
Associate